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ABSTRACT

This paper provides an overview of the Academy of Reading program (by AutoSkill International, Inc.), a comprehensive reading remediation tool designed to complement curriculum for grades K-12. It notes the computer-based approach is designed to help underachieving readers get the skills they need to become proficient, and the product includes modules for phonemic awareness, reading subskills (including visual, auditory visual and oral reading) and comprehension paragraphs to practice the students' reading ability. The paper notes the Academy of Reading is used in approximately 2,900 sites across the United States and Canada. Sections of the paper discuss background, philosophy and goals, program components, evidence of effectiveness, professional development and support, implementation, costs, considerations, contact information, and policy issues and questions. (SR)

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Academy of Reading

**Background - Philosophy and Goals - Program Components - Evidence of Effectiveness
Professional Development and Support - Implementation - Costs - Considerations
Policy Issues and Questions - Resources**

Topic or Category: Reading
Grade Level: K-12
Target Population: General

OVERVIEW

Background and Scope:

The Academy of Reading by AutoSkill International Inc. is a comprehensive reading remediation tool designed to complement curriculum for grades K-12. Based on original research between 1986 and 1990, by Fiedorowicz and Trites, the Academy of Reading is a computer-based approach designed to help underachieving readers get the skills they need to become proficient readers. The product includes modules for phonemic awareness, reading subskills (including visual, auditory visual and oral reading) and comprehension paragraphs to practice the students' reading ability.

Complementing the Academy of Reading's powerful training component is a complete testing lab with the tools necessary for diagnosing a student's reading ability. Based on the student's assessment, an individualized lesson plan is developed and prescribed to address their specific education needs.

Surrounding the academy's testing/training modules is a comprehensive management system to monitor and analyze the learning process. A wide range of reporting capabilities enable the program administrator to pretest and post-test students, correlate time-on-task to gains or any other of the wide range of metrics used in the program. The Academy of Reading is being used in approximately 2,900 sites across the United States and Canada.

Philosophy and Goals:

The goal of AutoSkill International's Academy of Reading is to improve student achievement and foster a love of reading by developing strong phonemic awareness, as well as decoding and reading comprehension skills. Underlying the AutoSkill program is the understanding that even though individuals with reading difficulties have many similar characteristics, they have different strengths and weaknesses in various reading skills. Consequently, the program is designed to apply different teaching methods that match each student's strengths and weaknesses.

Program Components:

The main components of AutoSkill include the following:
Complementary Function: The Academy of Reading is designed to complement the existing curriculum for grades K-12. The program consists of 30-minute training sessions, three to five times per week, and encourages educators to plan, organize and offer a variety of literacy-based learning opportunities within the existing language arts schedule.

Core Skills Development: The Academy of Reading develops skills deemed essential in literacy development. It addresses the core skills of phonemic awareness and decoding, and allows educators to explore alternative instructional strategies to meet the needs of all students.

The Instructional Activities: The Academy of Reading offers three main types of instructional activities, including:
Phonemic Awareness: Students develop the ability to recognize and manipulate the elementary speech sounds that make up spoken words.
Reading Subskills: Students are led through a logical progression of reading subskills, from letter names and sounds, to high-frequency letter combinations, to words, phrases and sentences.
Reading Comprehension: Oral and silent reading-comprehension exercises entice students to focus on paragraph content, while questions encourage the development of higher-order thinking skills.

The Training Process: Training in the Academy of Reading is based on two main concepts:
1. A task-analytic approach, which breaks down the complex task of reading into basic components to exercise and strengthen students' decoding skills.
2. The principle of "automaticity," which suggests that the basic components of reading must be learned at a rapid and accurate response level to ensure the process becomes automatic.

The Management System: A sophisticated, yet user-friendly, academy record-keeping system shows cumulative student progress in component reading skills. The detailed data collection system also serves as a diagnostic tool for teachers.

Student Motivation: As students master a component of their training, they are presented with an award.

Dialogue Facilitation: The academy's printable records for individual students create an opportunity for teachers to discuss student progress with parents. The Academy of Reading also can be implemented as part of literacy programs at community centers and public libraries.

Technical Features: The Academy of Reading is available as a stand-alone or as a network program in both Windows and MacIntosh platforms.

Evidence of Effectiveness:

Summary of Evidence:
Several research studies have been conducted to examine the effectiveness of the AutoSkill reading program for students with reading difficulties. Subsequent field-site evaluations have been carried out to examine the program's effectiveness in adolescent literacy training and with socioeconomically disadvantaged students. The research findings demonstrate that the Academy of Reading program is effective with a wide range of students in a number of different learning environments. The results of these studies, however, cannot be compared easily because a number of critical factors, such as the length and frequency of training and the severity of the student's reading difficulties, were not consistent across the studies.

Discussion of Evidence:
Studies and evaluations of the Academy of Reading program include the following:

1. A 1986 research study (Fiedorowicz) involved 15 reading-disabled children who had failed to acquire normal reading proficiency despite average intelligence, socio-cultural opportunity, conventional instruction and freedom from gross sensory, emotional or neurological handicaps. The average age was 11.0 years (range of 8.1 to 13.8 years), and the average projected reading grade delay (as measured by the Wide Range Achievement Test) was 2.3 grades (range of 1.5 to 4.3 grades).

The pre-test and post-test assessment included measurements of accuracy and latency of response for the component reading subskills. In addition, a variety of reading achievement measures was administered. The Gallistel-Ellis Test of Coding Skills was used to assess phonetic knowledge; the Qualitative Analysis of Silent and Oral Reading was used to assess the reading of close paragraphs; and the Student Problem Individual Reading Evaluation was used to assess reading word recognition and paragraph reading fluency, retention and comprehension. The results of participants trained on the Academy of Reading program during the first part of the academic year were compared with the results of those who did not receive the training.

Students who received the training improved more than the untrained participants in phonetic knowledge of words and reading word recognition (1.1 grade-level gain versus a 0.1 grade-level gain). In addition, the trained participants improved more than the untrained participants in oral reading accuracy, oral reading speed, auditory-visual matching accuracy and visual matching speed. An additional comparison revealed that these reading gains were maintained over a four-month follow-up period.

2. A 1987 Study (Fiedorowicz and Trites) included 115 students (82 males and 33 females) who met the same rigorous criteria for reading disability employed in the first study. The average age was 11.2 years (range of 7.9 to 14.6 years), and the average projected reading grade delay (as measured by the Wide Range Achievement Test - Revised) was 2.9 grades (range of 1.2 to 6.2 grades).

The untrained control participants (17) was pretested and post-tested at the same time of the academic year as were the AutoSkill-trained participants, but, in the interim period, the untrained control participants proceeded normally within the school system. The alternate computer-trained control participants (24) were provided with computer-assisted programs concerned with some aspect of language arts development for three half-hour sessions per week, for a total of 30 hours. They were compared with a matched subsample of trained in the academy approach for 30 hours.

The pretest and post-test assessment battery included the AutoSkill Reading Program Test Battery to evaluate component reading subskills, the Wide Range Achievement Test - Revised to assess reading word recognition, the Gallistel-Ellis Test of Coding Skills to assess phonetic knowledge, the Qualitative Analysis of Silent and Oral Reading to assess the reading of close paragraphs and the Student Problem Individual Reading Evaluation to assess paragraph reading fluency, retention and comprehension. The AutoSkill-trained participants improved more than the untrained control participants in component reading subskills. In addition, they improved more than the untrained control participants in reading word recognition, phonetic knowledge of letters, phonetic knowledge of syllables, paragraph reading accuracy, paragraph reading speed, paragraph reading retention and paragraph reading comprehension. They also exhibited better results for graphic representation and meaning of inserted words in close passages.
The AutoSkill-trained participants also improved more than the alternate computer-trained control participants in reading word recognition, paragraph reading accuracy and paragraph reading speed.

3. A third study was conducted (Fiedorowicz and Trites, 1990) to determine if the gains made in the second study were maintained over a one-year period. The participants in this study consisted of a randomly selected subsample of reading-disabled participants from second study. The average age was 11.1 years (range of 7.3 to 14.6 years), and the average projected reading grade delay (as measured by the Wide Range Achievement Test - Revised) was 3.3 grades (range of 1.2 to 6.2 grades). These follow-up participants were evaluated one year following their final post-test assessment in the second study (i.e., Fiedorowicz & Trites, 1987). As in the second study, the assessment battery included the AutoSkill Reading Test Battery, the Wide Range Achievement Test-Revised, the Gallistel-Ellis Test of Coding Skills, the Student Problem Individual Reading Evaluation and the Qualitative Analysis of Silent and Oral Reading.
The results showed that the participants trained on the Academy of Reading maintained their gains, not only in component reading skills but also in general reading skills, after one year. Phonetic knowledge of letter sounds and phonetic knowledge of words improved from post-test to follow-up. In contrast, the participants who did not receive the AutoSkill training continued to show a relatively low level of performance in most of the general reading skills.

4. An investigation by the Special Education Department of the Center Wellington District High School in Fergus, Ontario, examined the program's effectiveness as a remedial program for adolescents in a special education class (Steane and Vosburgh, 1990). This study involved 14 students with reading scores under a level of ability that would allow them to handle the language demands of their other courses. The majority of these adolescents also had learning profiles that included a fragmented attention span, inappropriate classroom behavior and a low self-concept. Their reading ability was pre-tested and post-tested with the Gates-MacGinitie Reading Test.
A comparison of their pre-test and post-test scores revealed a 2.17 grade-level improvement.

The teachers involved in the investigation noted that this gain in reading achievement was accompanied by increases in attention span, productivity and self-esteem.

5. An investigation at Wellington High School in Wellington, Texas, examined the effectiveness of the Academy of Reading program as an effective remedial program for underachieving, socially disadvantaged adolescents (Fiedorowicz and Trites, 1986). This study involved 15 adolescents with reading difficulties. Five of these students worked on the program for a short period of time (1.4 hours of training on average), while 10 had 18 or more sessions (9.2 hours of training on average). All students were pre-tested and post-tested with the Wide Range Achievement Test-Revised and the Gallistel-Ellis Test of Coding Skills.
The word recognition scores of participants who had more exposure to the program increased by 1.25 grades, while their phonetic knowledge of words increased by 7%. For the untrained students (those who only worked on the program a short time), reading word recognition scores at post-testing declined by one-third of a grade, while their scores on phonetic knowledge of words were virtually unchanged.

6. An investigation at Humble Middle School in Humble, Texas, (Vladyka, 1994) involved 300 students, including both regular education students and those classified as having special needs, learning difficulties and emotional difficulties, plus English as a Second Language students, who received 20 minutes of training every other day. Students were tested using two forms of the Gates-MacGinitie reading test in August 1993 and March 1994.
According to the results, regular education students achieved reading comprehension gains ranging from 1.13 to 1.45 years (where previous gains averaged .41 to .45 years). Special education students acquired gains in reading comprehension skills three times the rate of previous years.

7. An investigation by Alisal High School in Salinas, California, demonstrated the effectiveness of the AutoSkill reading program with socioeconomically disadvantaged individuals (Griffin, 1987). The students involved in this study were predominantly of Hispanic origin and low socioeconomic status. One sample of 62 students received training during the 1986-1987 academic year, and a second sample of 50 students received training during the 1987-1988 academic year. On average, they received 17 hours of training in 30-minute sessions. Their reading ability was pre-tested and post-tested with the Woodcock Reading Mastery Test.
For both groups, results indicated an average gain of approximately 2.4 grade levels.

8. A study of the effectiveness of the AutoSkill reading program with socioeconomically disadvantaged individuals was conducted by the Sante Fe Public School District in New Mexico (Gutierrez and Reed, 1988). These studies involved Chapter I (now Title I) target schools.

Study A: In spring 1987, a pilot investigation was carried out at the Agua Fria Elementary School. This school was selected because its students were identified as having the poorest reading skills in the district. On average, the 59 students involved received 16 hours of training on the AutoSkill Reading Program in 30-minute sessions. Their reading comprehension was pre-tested and post-tested with the Metropolitan Reading Diagnostic Test.
The results indicated an average gain of 15.4 normal curve equivalents (NCE). (For any test, at any grade, an NCE score of 50 is "average" and thus equals grade level. Although it is not totally accurate, NCE gains can be thought of as approximating percentile gains.)

Study B: In the 1987-1988 academic year, 450 students in grades 1-8 were trained with the AutoSkill reading program.
Collapsing across grade level, the average gain between the pre-test and post-test administrations of the Metropolitan Reading Diagnostic Test was 14.8 NCEs (see bullet above).

Professional Development and Support:

AutoSkill offers a one-day introductory course for the Academy Reading program. Teachers learn underlying principals of the program, how to get started, academy mechanics and other aspects of successful implementation. In addition, academy workshops are designed to help teachers and program administrators build their knowledge and expertise in reading theory, as well as to develop reading

strategies and effective methods of implementing reading programs and technology into their schools.

A second day of follow-up training occurs six-to-eight weeks after the program has started. Teachers review items learned to date and learn more about monitoring student progress, troubleshooting and motivational strategies.

A two-day special education inservice training is designed for teachers who work with special-needs students.

AutoSkill International has a network of about 25 certified field trainers in the United States. Workshops are conducted to keep field trainers current on the program.

Implementation:

Several implementation guides focus on different grade-level applications of the AutoSkill program.

Costs:

An Academy of Reading site license costs $9,900 and includes implementation and a user manual. This is a one-time purchase; there are no additional costs or annual fees. With a site license in place, the school can run the program on all in-school computers without restriction on the number of students enrolled in the program.

Training costs $1,000 per day and includes 10 introductory training manuals. Follow-up visits are $850 per day. Additional training materials can be purchased for $15 a copy.

Considerations:

According to AutoSkill International, Inc., on average, reading-delayed students will achieve 2.5 grade-level gains in comprehension abilities after 25 hours of training with the Academy of Reading. The company backs up this claim with a guarantee: "When used as reading intervention following AutoSkill Success Track, the Academy of Reading is guaranteed to achieve a 2.5 grade-level gain with underachieving students."

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Policy Issues and Questions:
How can states help districts and schools choose the most appropriate reading programs to improve students' skills and performance? What information and assistance would be useful?
Should states promote particular reading programs for districts and schools to use?
How can a reading program's track record be checked and validated?
What criteria should states and districts use to invest in various reading programs initially and for the long term?
How should policymakers weigh the benefits of a reading program versus its cost and required resources?
Can a balance be struck between effectiveness and efficiency?
What state policies can help improve teacher training and professional development so teachers are better equipped to help all students read successfully?

Resources:

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